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ABSTRACT

The Educational Followup Study was designed to examine the relationship between perinatal variables and the later development of problems in school learning and behavior. A survey of 967 children manifesting learning and behavior problems, found that 43.8% of the subjects were classified in one or more of the following categories: (1) special class placement; (2) retention; (3) reading disability; (4) problems of attitude and behavior; and (5) referral for special services. Since objective reading measures obtained on this population, as well as earlier measures of school readiness and language development, closely approximate the distribution of such scores in the normative samples, the large proportion of problems identified raises questions regarding the base rates for such difficulties in the general population as well as uncovering a rich source of school learning and behavior problems for intensive analysis. (Author)

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Categories of Exceptionality and Disorders of Learning and Behavior Found in Educational Follow-Up Population

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Summary

In a survey of school learning and behavior problems manifested in a sample of 967 children participating in the Educational Follow-Up Study it was found that 43.8% of the subjects were classified in one or more of the following categories: (1) special class placement, (2) retention, (3) reading disability, (4) problems of attitude and behavior, (5) referral for special services. Since the objective reading measures obtained on this population, as well as earlier measures of school readiness and language development, closely approximate the distribution of such scores in the normative samples, the large proportion of "problems" identified raises questions regarding the base rates for such difficulties in the general population as well as uncovering a rich source of school learning and behavior problems for intensive analysis.

A primary aim of the Educational Follow-Up Study is to examine the relationship between perinatal variables and the later development of problems in school learning and behavior. The present report is a survey of the incidence of specified learning and behavior problems manifested in the study population by the spring of 1969.

Utilizing a population of children whose mothers received prenatal care and delivered their offspring at the University of Minnesota Hospitals as participants in the Collaborative Perinatal Research Project,[1] Follow-Up Study subjects have been tested at pre-kindergarten and followed annually thereafter. In the most recently completed round of data collection,

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[1] This Study, "The Collaborative Project for the Study of Cerebral Palsy, Mental Retardation, and other Neurological and Sensory Disorders of Childhood." is a major investigation in twelve medical centers of the antecedents of neurologically related childhood disorders. At each hospital, all pregnant women who came for care were encouraged to participate in the study. The University of Minnesota Hospitals' sample is comprised of families of graduate students, welfare clients, and middle class private patients, with the former two groups predominating.

during the spring and summer of 1969, school performance data was obtained on 967 subjects or 78% of the original group of 1240 children who were tested prior to school entrance. Of these subjects, 178 had completed third grade, 249 were finishing second grade, 294 were finishing first grade and 243 were about to conclude their kindergarten year in school. An additional 65 (5%) of the original subjects had not yet entered kindergarten due to local entrance age requirements.

Although the majority of subjects with the same birth year are to be found in the same grade, there are a number of exceptions due to some children repeating grades and others entering school a year later than anticipated because of varying age requirements for school entrance. For some purposes, it was found most useful that data be reported for children at specific age levels, while for other variables the grade level information was deemed more appropriate.

Table 1 shows a steady increase in special class placements throughout the age range represented. This is to be expected since the older the child, the longer he has been in school and the more opportunities there have been to identify any problems which may be present. There are no special class placements reported for 1963 birthdate subjects who were all in their kindergarten year. Such placements were still relatively rare in first grade with only 5 (1.7%) of those with 1962 birthdates so placed. Of those subjects born in 1961, 3.6% were in special classes by the spring of 1969, while 4.1% of the oldest group, those born in 1960, were reported in one or another area of exceptionality by the same date.

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Table 1

Special Class Placements in the 1968-69 School Year

Birth Year	N of Completed Records	M	F	Total
1960	218	5	4	9 (4.1%)
1961	248	5	4	9 (3.6%)
1962	297	1	4	5 (1.7%)
1963	198	0	0	0

As portrayed in Table 2, 84 or 11.5% of the 726 study subjects who had completed one or more years of school had repeated at least one grade. Those subjects who were completing their first year of kindergarten were not included in the total N since they had not yet been in school long enough to have been retained in grade. There were no opportunities for third grade retentions as the oldest subjects were just completing this grade for the first time. The general belief that retention in grade is better done early or not at all appears to prevail in the school districts attended by Follow-Up children; the reduction in retention at second grade is quite marked.

The results in Table 3 were obtained in response to an item on the Cumulative Record Review requesting teachers to report whether or not the child in question showed problems of attitude and/or behavior. Teachers identified a surprisingly high proportion (28%) of their pupils as manifesting problems of attitude and behavior. The proportion of children so identified shows an increase from 23% in kindergarten to 30% in first grade. This might be anticipated on the basis that the first grade curriculum makes more demands upon the child and calls for greater self-control than do kindergarten activities. Thirty-one per cent of second grade subjects were reported as showing problems followed by a drop to 25% in third grade.

The decrease in proportion of subjects labeled as "problems" from second to third grade may be an artifact due to the composition of the third grade group. This group consists of only those 1960 birthdate children who entered school during the calendar year in which they reached their fifth birthday and who progressed from grade to grade with no retentions. All of

Table 2

Grades Repeated

Grade	M	F	Total
Kdgn.	23	14	37
First	25	15	40
Second	4	3	7
Total	52	32	84

Table 3

Teacher Identification of Problems of Attitudes and Behavior

Grade	N of CRR's Returned	M	F	Total
Kdgn.	243	36 (32%)	20 (16%)	56 (23%)
First	293	53 (35%)	36 (25%)	89 (30%)
Second	244	50 (39%)	26 (22%)	76 (31%)
Third	170	21 (26%)	22 (24%)	43 (25%)
Total	950	160 (34%)	104 (22%)	264 (28%)

the other groups (kindergarten through second grade) include, in addition to normal progress youngsters, those subjects who were retained in grade at some point as well as those who may have been held out of school for an additional year prior to kindergarten.

It is apparent from the data that boys are consistently rated as showing more problems in the areas under consideration than are girls. At each grade level relatively more boys than girls are perceived as problems with a particularly striking difference at kindergarten where twice as many boys (32%) are identified as showing problems than girls (16%). For girls the peak in behavior problem ratings occurs at first grade (25%) while for boys the peak occurs at second grade (39%).

The large number of teacher identified problems of attitude and behavior suggest that either Follow-Up Study subjects are an unusually disturbed group of children or that primary grade teachers perceive an unexpectedly high proportion of their students as presenting such problems. In the absence of adequate base rate data on such teacher judgments, these ratings have been accepted as reported at least in the preliminary analyses.

The Stanford Paragraph Meaning scores of the Follow-Up Study subjects presented in Tables 4 and 5 follow quite closely the distribution of scores obtained by the normative samples described in the Stanford Primary I and Primary II manuals. Although the range of scores may be somewhat restricted at the upper extremes as indicated by the fact that the grade equivalent score of 4.4 was at the 75%ile for third grade study subjects, but only at the 66%ile for the normative sample, it is apparent that the median and 25th %ile scores of the two groups are very similar. The median scores

Table 4

Stanford Reading Achievement Grade Equivalent Scores for Subjects At End of Second Grade

	Teacher Administered (May of Second Grade)		Educational Examiner Administered (1960 Subjects only) (Summer between second and third grade)
	Paragraph Meaning *		Word Meaning **
Q_3	3.2	%ile norms not available for end of second grade	3.5 - 72%ile
Mdn.	2.8		2.8 - 44%ile
Q_1	2.1		1.9 - 10%ile
Range	1.3 - 4.0	(top of test)	1.2 - 5.4

Table 5

Stanford** Reading Achievement Grade Equivalent Scores on 1960 Birthdate Subjects at End of Third Grade

	Teacher Administered (May of third grade)		Educ. Exam. Admin. (Summer between 3rd and 4th)
	Paragraph Meaning	Word Meaning	Word Meaning
Q_3	4.4 - 66%ile	4.4 - 66%ile	4.7 - 74%ile
Mdn.	3.6 - 40%ile	3.8 - 46%ile	4.0 - 54%ile
Q_1	3.1 - 23%ile	3.3 - 26%ile	3.5 - 30%ile
Range	1.3 - 7.5+	1.8 - 7.5+	1.7 - 7.5+

* Primary I Battery

** Primary II Battery

for both second and third grade study subjects fell within one-tenth of a grade of their actual grade placement at time of testing.

These findings support earlier evidence obtained on ITPA and Metropolitan Readiness Tests at pre-kindergarten and pre-first grade examinations that the group of Follow-Up Study subjects is not a deviant subset of the general population on educational variables, but instead closely approximates the scores of the norm groups used in the standardization of these instruments.

Table 6

Second and Third Grade Subjects Reading One or More Years Below Grade Placement in Spring of 1969

	Paragraph Meaning			Word Meaning		
	M	F	Total	M	F	Total
2nd Gr.	28 (24%)	16 (14%)	44 (19%)			
3rd Gr.	16 (21%)	9 (11%)	25 (16%)	15 (20%)	10 (12%)	25 (16%)

Subjects scoring one or more years below actual grade placement on one or more of the reading measures were identified as reading disability cases. Stanford reading measures were administered to 228 second grade subjects and 158 third grade subjects in the spring of 1969. Nineteen per cent of the second grade subjects and sixteen per cent of the third grade subjects were categorized as reading disability cases. It may be seen from Table 6 that boys outnumber girls in proportion of reading disability cases at both grade levels. At grade three the proportion of reading problems

among boys is twice as great as that among girls. In interpreting the data for third grade subjects, it should be noted that in some ways this is a select group for the reasons described above in the section on retention.

As shown in Table 7 nineteen per cent of the total sample had been referred to one or more special services, with boys outnumbering girls in proportion of referrals by approximately two to one. It should be borne in mind that referral for special services depends in part upon the availability of appropriate resource personnel within the school system or the community and that such resources are not equally distributed among the more than 200 different school districts in which study subjects are currently located. For example, in some areas social workers, special tutors, or remedial reading services are not available, therefore children attending school in those areas who are in need of such services would not have been referred and would therefore not be represented in Table 7. For this reason, reported referrals should be regarded as a minimal estimate of the numbers of children in need of special services.

A total of 424 subjects representing 43.8% of all subjects for whom Cumulative Record Review data were obtained in the spring of 1969 were identified as presenting one or more of the problems of school learning and behavior investigated in this study. The large proportion of problems reported for a population whose scores one measures of school readiness, language development and reading achievement closely approximates the distribution of such scores in the normative samples raises questions regarding the base rates for such difficulties in the general population as well as uncovering an extensive pool of school learning and behavior problems for further analysis.

Table 7

Regular Class Subjects Referred for Special Services*

Grade	M	F	Total
Kdgn.	13 (11%)	8 (6%)	21 (8.6%)
First	33 (22%)	22 (15%)	55 (19%)
Second	53 (41%)	13 (11%)	66 (27%)
Third	22 (27.5%)	20 (22%)	42 (25%)
Total	121 (25.6%)	63 (13%)	184 (19.3%)

*Psychologist, social worker, speech therapy, remedial reading, medical, tutoring